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ESTIMATION OF KARYOLOGICAL INDICES OF THE BUCCAL EPITHELIUM IN CHILDREN WITH COMMUNITY-ACQUIRED PNEUMONIA

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Community-acquired pneumonia in children is an important cause of morbidity and mortality both in developed and in developing countries. Prompt diagnosis and appropriate treatment are very important. In the majority of cases, bacterial and viral pneumonia cannot be reliably distinguished from each other on clinical grounds. In practice, most children with pneumonia are treated empirically with antibiotics (Leung A., Wong A., Hon KL, 2018). That shows the importance of pneumonia severity prognosis and assessment, especially using non-invasive and safe for children methods.

Thus, the aim of the study was to estimate the karyological indices of the buccal epithelium in children with community-acquired pneumonia, depending on the severity of its course.

To reach the goal of the work, 70 pediatric patients with community-acquired pneumonia were examined comprehensively (mean age of children was 8.6 ± 0.57 years, boys were 54.3%, rural residents - 62.9%). Patients with acute pulmonary inflammation were more likely to have a focal form of the disease (47.1%) and epy-segmental one (40.0%), slightly less lobar (8.6%), and only 4.3% of cases of interstitial pneumonia. Most children experience right-sided lung parenchyma pneumonia (60.0%), left-sided inflammation was in 31.4%, and bilateral lung inflammation in 8.6% of patients. Patients with pneumonia were predominantly reported with the moderate-to-severe disease (74.3%, I clinical group) while with severe was 25.7% (II clinical group).

The quantitative predominance of pathological cells in the smear-imprints of the buccal epithelium with severe pneumonia compared to the first group was established (5.5 out of 75.0 cells on average versus 2.8 out of 141.7 cells, $p<0.05$). Despite the absence of statistically significant differences in the average indices of buccal epithelium buccal indices (table), epitheliocyte proliferation in the form of the protrusion ("vesicle") was more frequently observed in patients of the second group (1.7 such cells versus 0.2 on average in group I, $p<0.05$).

Table

Karyological indices of the buccal epithelium in children with different pneumonia severity

Karyological indices of the buccal epithelium	Clinical group I	Clinical group II
Cytogenetic index	1,80	3,20
Proliferation index	0,30	1,20
Index of early destruction	0,00	0,20
Index of complete destruction	0,70	0,90

The more intense inflammatory process of the pulmonary parenchyma and the severe course of the disease was confirmed by the ratio of the chances of detection in the smear-prints of buccal epithelium 5 and more cells at the level of 9.0 (95% CI: 0.66-12.28), with a relative risk of 3.0 (95 % CI: 1.31-6.86), an absolute risk of 50.0%, with a likelihood ratio of 1.8.

The results of the research show the association of the intensity of the inflammation process in lung parenchyma with the pathological changes in the smear-imprints of the buccal epithelium. The obtained data prove a perspective for further studying and possibilities of using buccal epithelium analysis as a non-invasive test for the prognosis of severity for pneumonia in children.